

Our ref: KON-1707

Client's ref: KPD-4982 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE-----X
In re Application of: N. HIROSE, et al :

Serial No. : 10/056,577 :

Group : 1756

Filed : January 24, 2002 :

Examiner: C. Rodee

For : TONER FOR FORMING
ELECTROSTATIC IMAGE*
*
DECLARATIONCommissioner of Patents
P.O. Box 1450
Alexandria
VA 22313-1450

S i r:

I, Mr. Hiroshi Yamazaki, hereby state and declare as follows:

1. I am one of the named Inventors in this Application.
2. I received a Masters Degree in Applied Chemistry from Yokohama National University in March 1979. Since April of 1979, I have been employed by Konica Corporation, the Assignee of this Application, and have been engaged in research and development of electrophotographic materials.

3. I am aware that the Examiner in this Application has rejected the claims based on U.S. Patent 5,698,354 (Ugai) and U.S. Patent 5,948,584 (Hashimoto). I am also aware that the Examiner has stated that the toners made in accordance with Ugai and Hashimoto would inherently have the amount of particles having a circle corresponding diameter of 0.60 to less than 1.0 μm to be less 5% by number.
4. I have studied both Ugai and Hiroshi and have prepared toners in accordance with both Ugai and Hiroshi and tested those toners to determine the amount of particles which fall within the range of 0.60 to 1.0 μm . These tests were prepared by me or under my direct supervision and control. The results of the tests are reported below.
5. Cyan toner 12, as recited in Column 41 of Ugai, was prepared. It was prepared by the so-called pulverization method following the procedures as outlined in Ugai for preparation of Cyan toner 12. ~~The molten and kneaded~~ mixture was crushed coarsely in a hammer mill and then further crushed in an airtight crusher. The particles were classified by a multi-stage classifier as recited in

Column 40, lines 61-66 of Ugai. The Cyan toner was further subject to heat and mechanical shearing so as to spherically shape the particles in the same manner as recited in Ugai, Column 41, lines 14-20.

6. Toner particles E were prepared in accordance with Example 5 of Hashimoto. This process is a so-called suspension polymerization in which a monomer was dispersed in a water based medium as recited at Column 26, line 40 going over to Column 27, line 32. In this process, the monomer was dispersed in a high speed stirrer (TK-Homomixer) and the resulting monomer dispersion contained monomer particles having a wide range particle size to include particles having a size less than 1 μm . The monomer dispersion was subject to polymerization without classification or filtration. After the polymerization, the resulting contents were filtered so as to recover the product.

7. The Ugai and Hashimoto toners were then compared to the toners prepared in the examples of the present Invention. All of the toners were measured in accordance with the examples of the present Application as recited starting on page 39 of this Application. The results of the measurements performed on the toners are recited in Table 2 as attached hereto.

8. As can be seen from the attached Table 2, Ugai had 7.8% of its toner particles which fell within the range of 0.6 to 1.0 μm . As can be seen, this is outside the range recited in the claims of this Application, namely, 5%. Hashimoto had 5.8% of its particles that fell within the range of 0.6 to 1 μm . This is also outside the range of the present Invention as claimed.
9. Using these toners, they were evaluated for image density, fog density, and half-tone unevenness in the same manner as recited in the instant Application, starting in the middle of page 46 of the Application. All of the toners were evaluated in accordance with the Application. The results of these tests are shown in Table 3 as attached hereto.
10. As can be seen in Table 3, image density, fog and half-tone unevenness deteriorated after 50,000 copies. It is believed that this deterioration is caused by the fact of these smaller particles which induce staining of carrier particles or sleeves. I believe that these results are both surprising and unexpected.

It is declared by undersigned that all statements made herein of undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment, or both, under section 18 U.S. Code 1001, and that such will false statements may jeopardize the validity of this Application or any patent issuing thereon.

Hiroshi Yamazaki
Hiroshi Yamazaki

Dated: This 5th day of *August*, 2003.

Encl: Table 2
Table 3

Table 2

Colored Particles No. (g)	Volume average particle diameter	SF-1	SF-1/SF-2	Number percentage in the range of 1.10-1.52	Number percentage in the range of 1.20-1.35	Number percentage in the range of 0.60-1.00
1Bk	6.5 μ m	149	1.35	98	68	1.2
1Y	6.5 μ m	149	1.35	98	68	1.2
1M	6.5 μ m	149	1.35	98	68	1.2
1C	6.5 μ m	149	1.35	98	68	1.2
2Bk	6.7 μ m	158	1.36	99	63	0.5
3Bk	6.6 μ m	138	1.27	96	79	3.9
4Bk	6.5 μ m	159	1.58	83	46	1.3
5Bk	6.5 μ m	140	1.21	90	58	5.7
6Bk	6.6 μ m	116	1.06	82	36	0.9
6Y	6.6 μ m	116	1.06	82	36	0.9
6M	6.6 μ m	116	1.06	82	36	0.9
6C	6.6 μ m	116	1.06	82	36	0.9
7Bk	6.5 μ m	146	1.26	97	68	1.0
8Bk	6.5 μ m	163	1.61	76	33	0.8
9Bk	6.8 μ m	119	1.16	90	62	1.5
10Bk	6.6 μ m	151	1.37	96	64	3.2
11Bk	6.5 μ m	148	1.32	96	68	4.2
12Bk	6.5 μ m	147	1.31	92	53	5.2
Ugal	7.4 μ m	170	1.31	65	45	7.8
Hashimoto	6.2 μ m	135	1.18	92	37	5.8

Table 3

Example No.	Toner No.	Image density		Fog density		Half tone unevenness	
		Initial	After 50,000	Initial	After 50,000	Initial	After 50,000
Example 1	1Bk	1.40	1.41	0.001	0.001	A	A
Example 2	2Bk	1.41	1.40	0.001	0.001	A	A
Example 3	3Bk	1.40	1.41	0.001	0.003	A	A
Example 4	7Bk	1.40	1.41	0.001	0.002	A	A
Example 5	10Bk	1.40	1.42	0.001	0.004	A	A
Example 6	11Bk	1.40	1.42	0.001	0.004	A	B
Comparative 1	4Bk	1.40	1.36	0.001	0.005	B	C
Comparative 2	5Bk	1.40	1.42	0.001	0.012	A	D
Comparative 3	6Bk	1.40	1.41	0.001	0.011	A	C
Comparative 4	8Bk	1.40	1.43	0.001	0.010	A	C
Comparative 5	9Bk	1.40	1.41	0.001	0.011	A	C
Comparative 6	12Bk	1.40	1.44	0.001	0.015	B	D
Ugai		1.40	1.36	0.001	0.028	B	D
Hashimoto		1.40	1.38	0.001	0.017	B	D